JANUARY 1984

PROVINCIAL EXAMINATION PROGRAM

SUMMARY TO SCHOOLS

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EXAM SUMMARY REPORT TO SCHOOLS

In August, 1983, the Minister of Education, the Honourable Jack Heinrich, announced the introduction of provincial examinations for Grade 12 academic subjects. The first session of these examinations was administered in January, 1984. The intent of this report is to give a summary of the examination process and the results it produced.

The Purpose of the Examination Program

In announcing the new examination program the Minister stated that the purpose of this program is to ensure that Grade 12 students meet consistent standards of achievement in the academic subjects, and also to ensure that graduating students from all schools in the province will be treated equitably when applying for jobs or for admission to universities and other post-secondary institutions. An additional purpose of this program is to respond to strong public concerns for improved standards in education by providing external examinations as a challenge to students and schools alike.

The Preparation of the Examinations

To ensure the fairness and reliability of the examination, a system of checks and balances was established whereby each examination paper was checked by a variety of committees before being accepted. For each subject:

- The preparation committee, composed of experienced teachers of the subject being examined, produced a first draft based upon a table of specifications derived from the prescribed curriculum.
- A technical committee of measurement experts then conducted a technical review and produced an edited revision which became the second draft.

- The external editing committees, again consisting of subject specialists, reviewed content of each examination in terms of suitability and curriculum validity.

- The preparation committee, after a careful consideration of the suggestions from the review committee, prepared a final draft of the examination.

In addition to the process described above, three further steps were taken after the examinations were written to ensure the fairness and validity of each examination.

- Before commencing the marking process, each marking committee, composed of experienced teachers, examined the paper. Each item was considered in terms of appropriateness, clarity, and curricular validity. Where appropriate, each committee recommended either the deletion of an item or double-keying where a question might be answered correctly in more than one way.

- The Educational Research Institute of British Columbia conducted a further item analysis, checking particularly for psychometrically unsound items. This agency was also responsible for producing the various printouts of the final scores.

- Finally, the examination results were submitted to the Provincial Board of Examiners. In the light of the markers' reviews, the statistical analyses, and suggestions received from teachers, the Board had 13 out of the 1103 items deleted (1.17%).

The Marking Process

Both the Provincial and Scholarship components of each examination were marked by a committee selected from experienced teachers who had expressed a desire to be involved in the process. Such groups were familiar with the prescribed curriculum and with the expected performance levels for Grade 12 students.

Each marking committee:

- confirmed the curricular validity of the examination paper
- identified areas of concern and made appropriate recommendations
- established a marking key, together with a marking scale for each item
- set standards of performance for the examination (This is discussed more fully in the following section, Standard Setting)
- marked the examinations
- made recommendations to the Board of Examiners and to future preparation committees.

Final marking keys and scales were established through discussion by each subject committee, and great care was taken to ensure consistency of marking (from marker to marker and from day to day). For example, in the marking of the English 12 paper the head of each group systematically monitored the marking as it was done, and papers were selected at random and re-marked to ensure consistency.

Standard Setting

The level of difficulty can vary from examination to examination. After a review of possible procedures and in consultation with groups of educators throughout the province, it was decided to use two criteria for interpreting examination scores:

1) The examination-specific criterion. After reviewing the current examination paper in detail, each marking committee established standards of performance for that examination.

2) The population-specific criterion. The students' school marks were tabulated for each subject, producing a distribution of marks. This distribution was used to establish anticipated standards of performance for each examination.

A final set of examination performance standards was then developed, using the two criteria. These standards therefore reflected:

1. the experience of the committee as teachers and markers
2. the informed expectations of classroom teachers.

At the conclusion of the marking session, the results were submitted to the Board of Examiners, with the recommendations of each committee, for a final review.

Decisions of the Board of Examiners

In conducting its final review of the examinations, the Board of Examiners took into consideration:

- the comments and recommendations of each marking committee
- the reports of the technical advisory committee
- the analyses of the technical agency
- the input received from teachers in the field after the examinations had been written.

The Board accepted double-keying where it was recommended by the marking committees.

In addition, the Board deleted a total of thirteen items from the examinations as follows: Chemistry 12 (- item #25), English Literature 12 (-item #5), Physics 12 (- items #2, #9, #11, #56), Biology 12 (-items #1, #5, #14, #17, #29), German 12 (- items #43, #47).

In all 13 items were deleted from a total of 1 103 original items (1.1%).

Report From Board of Examiners

The Provincial Board of Examiners reported that the administration of the January examinations had gone exceptionally well. There were approximately 19 000 Provincial examinations and more than 3 000 Scholarship examinations written. This was an increase of 22% for Scholarships over last January's

total. 120 schools were involved in the January examination session including all of the province's semestered schools. In the Board's opinion the program met its objectives of providing a fair and impartial assessment of achievement throughout the province, of giving schools a realistic standard by which tney could set their goals, and of offering a challenge and a stimulus to student effort.

The following tables provide additional information about the results of the Provincial Examinations written in January, 1984.

Table 1 shows proportions of students in each letter grade category based on school marks, examination marks, scaled examination marks and the aggregate marks (consisting of school marks and scaled examination marks) for each subject examined with enrolments greater than 100 students.

Table 2 shows the distribution of letter grades for all subjects combined.

Table 3 provides the mean and standard deviation of the Raw Score, Reported Examination Mark and the School Mark for each examinable course.

Table 1

PROPORTIONS* OF STUDENTS IN EACH LETTERGRADE CATEGORY

BASED ON EXAMINATION RESULTS

SUBJECT		SCHOOL MARKS	EXAMINATION STANDARDS	EXAMINATION MARKS	AGGREGATE MARKS
ALGEBRA	A	10	7	8	7
	B	25	13	19	22
	C+	16	19	17	16
	C	16	20	15	20
	P	19	22	25	23
	F	16	20	16	12
BIOLOGY	A	10	13	15	10
	B	26	22	27	29
	C+	17	18	14	17
	C	14	20	23	21
	P	14	16	15	18
	F	10	12	6	5
CHEMISTRY	A	12	12	9	10
	B	32	20	25	29
	C+	17	20	17	16
	C	15	14	17	17
	P	15	17	20	17
	F	8	18	10	8
ENGLISH	A	7	4	4	4
	B	25	20	28	25
	C+	14	14	14	19
	C	21	24	21	23
	P	19	19	19	22
	F	10	14	12	6
ENGLISH LITERATURE	A	7	1	8	6
	B	33	10	22	31
	C+	16	14	15	15
	C	18	20	21	21
	P	15	21	24	20
	F	10	34	10	8
FRENCH	A	16	6	11	11
	B	35	11	24	31
	C+	17	14	16	17
	C	14	18	16	21
	P	13	28	24	16
	F	4	24	12	5
GEOGRAPHY	A	6	5	6	4
	B	26	17	22	25
	C+	18	26	20	19
	C	21	25	23	25
	P	19	14	18	20
	F	9	12	11	6
HISTORY	A	9	5	7	6
	B	27	17	22	27
	C+	16	17	16	14
	C	18	15	16	19
	P	18	22	27	26
	F	11	24	12	8
PHYSICS	A	10	11	11	9
	B	29	12	22	25
	C+	18	14	18	21
	C	19	25	21	20
	P	14	25	21	19
	F	10	14	8	6

* expressed as a percentage.

N.B. Since this was the first set of Provincial Examinations, particular care was taken to ensure that no student should be placed at a disadvantage. The final cut-scores for each examination was therefore adjusted accordingly. However, this will not necessarily be the practice in future sessions.

Final marks were also affected by two additional factors:

1. The examinations followed the common practice of automatically raising marks of 48, 49, to 50, thus eliminating a number of possible failures on the examination portion of the final grade.

2. While some students received failing marks from the school but passing marks on the examination, a much greater number received passing marks from the schools and failing marks on the examination.

This combination resulted in some final marks being raised to a passing level. A certain degree of mark inflation on the part of schools seems to have occurred, resulting in fewer failures than might have been expected.

OVERALL RESULTS
Table 2

THE DISTRIBUTION OF LETTER GRADES FOR ALL SUBJECTS COMBINED IS AS FOLLOWS:

GRADE LEVEL	SCHOOL MARKS	EXAMINATION STANDARDS	EXAMINATION MARKS	AGGREGATE MARKS	
A (86-100)	8.7	6.1	7.4	6.06	(1141 students)
B (73-85)	26.7	17.6	23.1	25.8	(4858 ")
C+ (67-72)	17.3	19.0	17.6	17.7	(3328 ")
C (60-66)	18.9	21.3	19.5	21.6	(4069 ")
P (50-59)	18.0	19.6	20.7	21.3	(4000 ")
F (0-49)	10.4	16.7	11.7	7.1	(1334 ")

Table 3

EXAMINATION and SCHOOL MARK SUMMARIES *

	RAW EXAMINATION MARK		REPORTED EXAMINATION MARK		SCHOOL MARK		NUMBER OF INDIVIDUALS
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	
Algebra 12	59.8	16.8	63.6	15.2	65.2	15.4	2710
Biology 12	53.6	15.1	69.8	13.1	67.2	13.9	1711
Chemistry 12	61.8	17.9	66.9	14.9	69.4	13.9	1043
English 12	63.3	12.8	65.1	12.8	65.9	13.3	7716
English Lit.12	55.4	14.2	65.2	13.4	67.3	14.3	639
French 12	56.5	15.5	65.9	14.6	72.0	12.5	981
Geography 12	59.1	13.1	65.3	12.9	66.0	12.9	1730
History 12	59.1	15.6	64.6	13.9	66.8	14.3	1704
Physics 12	52.1	15.7	67.3	13.3	68.2	14.6	501

*Results reported in this table are for examinations written by more than 100 individuals. Means are reported as percentages.

Province of
British Columbia

NEWS RELEASE

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Provincial Examination Results

Education Minister Jack Heinrich today released provincial results of the grade 12 examinations administered in January, 1984. Individual student results were issued to students last week.

Analysis of the data reveals a major difference between achievement standards set by the provincial marking committees and the standards set by teachers across the province.

Overall, 10.4% of students were assigned failing marks by their teachers, while 16.7% failed to meet minimum passing marks set by the provincial committees. There appears, as well, to be significant grade inflation at the "B" level. 26.7% of students were assigned a "B" grade from their teachers while 17.6% of students achieved a "B" letter grade on the exams.

Variations between teacher grading patterns and exam standards were more pronounced in some subject areas than others. In English Literature 12, for example, 10% of students were assigned failing marks by their teachers while 30% scored below the pass standard set by the provincial committee. In Algebra 12, 25% of students were assigned a "B" by their teachers while only 13% achieved the "B" standard on the exam.

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The overall distribution of marks was as follows:

Letter Grade	Teacher Assigned Marks (% of Students)	Exam Results Based on Committee Standards (% of Students)
A (86-100)	8.7	6.1
B (73-85)	26.7	17.6
C+ (67-72)	17.3	19.0
C (60-66)	18.9	21.3
P (50-59)	18.0	19.6
F (0-49)	10.4	16.7

Exam results were scaled, taking into account teacher expectations from the field and provincial standards set by marking committees. In reviewing the standards set by the marking committees, the Provincial Board of Examiners recommended that the passing mark for some subjects be adjusted to avoid unacceptably high failure rates during this transitional period. The position was taken that for this first administration, where students had to face a number of unknowns, every effort should be made to be fair and equitable. A summary of subject results is attached. A detailed report, including scaling information and final aggregate marks is available upon request.

"A tremendous contribution was made by teachers who participated in setting the examinations, each having had field experience in the subject areas for which they were chosen," said the Education Minister. "There were 250 markers who completed their task on time and with a great deal of professionalism."

Heinrich stated that he was pleased that the examination program is already having a positive effect on student work habits. "Teachers and administrators report a much improved sense of purpose and commitment in our classrooms. There is no question that this shift in attitude is precisely what parents and the public expect in our schools," Heinrich said.

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The examinations also seem to have stimulated more students to strive for excellence. This is reflected in the fact that there was a 22% rise in the number of students who wrote for scholarships, compared to last January, 1983 scholarship exam totals. "I must say I am most impressed with how students have responded to the program. They are to be congratulated," stated Heinrich.

A student's final mark is made up of 50% of the provincial exam mark and 50% of the mark awarded by the school. In order to obtain credit in a course, the student must achieve a final mark of at least 50%. Statements mailed to students include all of this information.

More than 19,000 provincial exams and 3,224 scholarship exams were administered in January. It is expected that close to 75,000 provincial and scholarship papers will be written at the June session. Examinations are administered in the following subjects: English 12, Algebra 12, Physics 12, Chemistry 12, Biology 12, Literature 12, History 12, French 12, Spanish 12, German 12, Latin 12, Geography 12, Geology 12.

Mr. Heinrich expressed his appreciation to superintendents, principals and teachers for their cooperation in the preparation and administration of the program. "I would especially like to thank the many classroom teachers who assisted in administering and marking the exams. Without their active and positive help, it would have been impossible to administer the exams successfully."

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The Board of Examiners anticipates that differences between teacher evaluation and the students' actual exam marks will tend to diminish as teachers throughout the province become familiar with provincially-held expectations and as the examiners refine the process of evaluation. One feature of the system which will make this process of reconciliation easier is the fact that the vast majority of those involved in setting, marking and interpreting the examinations are experienced teachers drawn from secondary schools throughout the province.

The Board of Examiners noted that while some problems were experienced in this first round of exams, the administration of the program in general had gone exceptionally well.

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PROPORTION OF STUDENTS IN EACH LETTERGRADE CATEGORY

BASED ON SCHOOL AND EXAMINATION RESULTS

SUBJECT		SCHOOL MARKS	EXAM MARKS
Algebra	A	10	7
	B	25	13
	C+	16	19
	C	16	20
	P	19	22
	F	16	20
Biology	A	10	13
	B	26	22
	C+	17	18
	C	18	20
	P	18	16
	F	10	12
Chemistry	A	12	12
	B	32	20
	C+	17	20
	C	15	14
	P	15	17
	F	8	18
English	A	7	4
	B	25	20
	C+	18	19
	C	21	24
	P	19	19
	F	10	14
English Literature	A	7	1
	B	33	10
	C+	16	19
	C	18	20
	P	15	20
	F	10	30
French	A	16	6
	B	35	11
	C+	17	14
	C	14	18
	P	13	28
	F	4	24
Geography	A	6	5
	B	26	17
	C+	18	26
	C	21	25
	P	19	14
	F	9	12
History	A	9	5
	B	27	17
	C+	16	17
	C	18	15
	P	18	22
	F	11	24
Physics	A	10	11
	B	29	12
	C+	18	14
	C	19	25
	P	14	25
	F	10	14